



Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200

**RBT18002**  
**Job Sheet 170067**



001869

Part No: RBT18002

Job Qty: 4 ea

Part Name: Expandable Blade Bolts Inspection Work Aid



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 1/9/18

Job Tracking No:

Due Date: 1/26/18

Created By: Marie Lajeunesse

Type: Stock

Description:

Customer: Navair (CNAVA01)

Aircraft Division, Highway 547, Building 562 Lakehurst, NJ, 08733 USA ph:(732) 323-2922

Note: DWG RBT18002 Rev 1 IPP Rev A 18.01.08 New issue DP Verify DD

Ship Via:

### Bill of Materials

### Job Routing

| Op No | Operation          | Qty   | Start Date | Due Date | Standard  |         | Workcenter/Supplier   |           | Sign-off         |
|-------|--------------------|-------|------------|----------|-----------|---------|-----------------------|-----------|------------------|
|       |                    |       |            |          | Setup hrs | Run Hrs | Workcenter / Supplier | Lead Time |                  |
| 90    | Start up Operation | 4 Ea  |            | 1/25/18  | 0.00      | 0.00    | Start Up Small Fab-4  |           | MLC              |
| 110   | Small Fab          | 4 pcs |            | 1/26/18  | 0.00      | 4.00    | Small Fab-4           |           | MLC DAS          |
| 120   | QC                 | 4 pcs |            | 1/26/18  | 0.00      | 0.00    | QC5                   |           | DAS 38           |
| 130   | Packaging          | 4 pcs |            | 1/26/18  | 0.00      | 0.00    | Packaging3-1 GA       |           | 8 9-88           |
| 140   | QC21-FG            | 4 Ea  |            | 1/26/18  | 0.00      | 0.00    | QC21                  |           | 9-88 MAR 28 2018 |

Part Op 110 - 1-Engrave placard RB41011 using marktronic engraver 2-Transfer drill Dart placard RB41011 into Pelican case  
Descriptions: APP-1170-E 3-Debur holes and remove chips from case. 4-Rivet Dart placard to Pelican case 5-Glue foam to case  
6-Pack case

DAS  
21  
9-88

MAR 28 2018

### Job Allocations

| Operation             | Component Part               | Required | Inventory | Allocated | Std Qty |
|-----------------------|------------------------------|----------|-----------|-----------|---------|
| 90-Start up Operation | 97524A032                    | 16       | 59        | 0         | 0       |
|                       | APP-1170-E                   | 4        | 2         | 0         | 0       |
|                       | RB41011                      | 4        | 965       | 0         | 0       |
|                       | RB412WA-CR&O-3-62-2A-1-2 139 | 4        | 0         | 0         | 0       |
|                       | RBT18002-1 93                | 4        | 0         | 0         | 0       |
|                       | RBT18002-3 93                | 4        | 0         | 0         | 0       |

### Part Specifications

Specifications could not be found.

Plex 1/9/18 8:33 AM Dart.lajeunesse.marie



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Hawkesbury, ON K6A 1K7  
CANADA  
TEL.: 1 613 632-5200  
Email: sales@dartaero.com  
www.dartaerospace.com

Container No: S053763



Part: RBT18002

Job No: 170067

Serial No/Batch: S053763

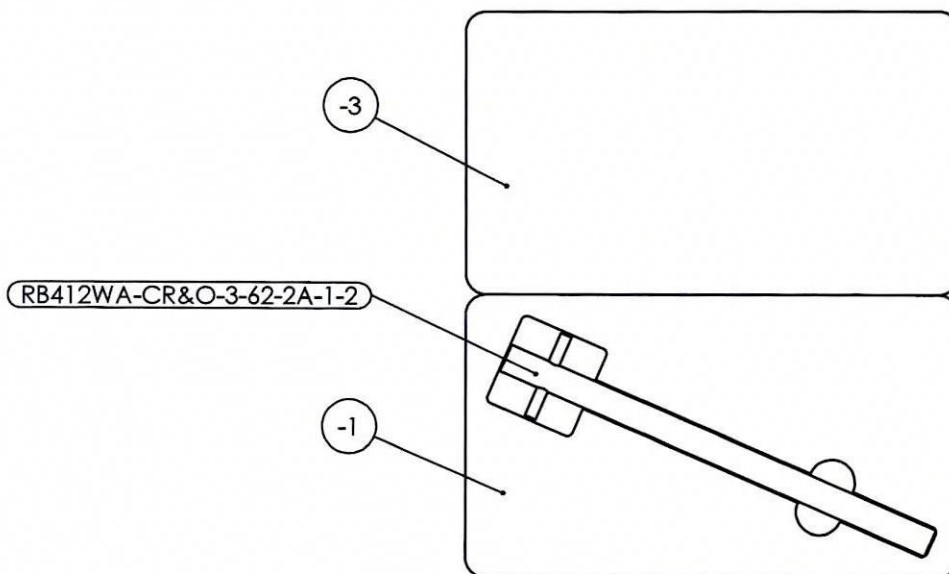
Revision: 1

Inspector:

Date: 03/22/18

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| REVISIONS |     |                          |           |         |          |
|-----------|-----|--------------------------|-----------|---------|----------|
| REV       | ECR | DESCRIPTION              | DATE      | INITIAL | APPROVED |
| 1         |     | RELEASED FOR PRODUCTION. | 9/29/2016 | DPD     | JAG      |



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WITHOUT NOTICE  
WORK ORDER

NO. 170057 MCLJ  
18-01-09

NOTE:  
REFERENCE FIGURE 62-2A.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                           |       |                                                                                                                                           |      |       |        |      |                                                |                     |                                              |                 |                                                  |                     |               |                  |          |                   |  |           |                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|-------|-------------------------------------------------------------------------------------------------------------------------------------------|------|-------|--------|------|------------------------------------------------|---------------------|----------------------------------------------|-----------------|--------------------------------------------------|---------------------|---------------|------------------|----------|-------------------|--|-----------|-----------------------------|
| <b>DART<br/>AEROSPACE</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                           |       |                                                                                                                                           |      |       |        |      |                                                |                     |                                              |                 |                                                  |                     |               |                  |          |                   |  |           |                             |
| TITLE<br>EXPANDABLE BLADE BOLT - DISASSEMBLY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                           |       |                                                                                                                                           |      |       |        |      |                                                |                     |                                              |                 |                                                  |                     |               |                  |          |                   |  |           |                             |
| DWG NO.<br>RBT18002                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | REV<br>1                                                                                                                                  |       |                                                                                                                                           |      |       |        |      |                                                |                     |                                              |                 |                                                  |                     |               |                  |          |                   |  |           |                             |
| <table border="1"> <tr> <td>MAT'L</td> <td rowspan="4">UNLESS OTHERWISE SPECIFIED<br/>DIMENSIONS ARE IN INCHES<br/>.XXX ± .005 FRACTIONS ± 1/8<br/>.XX ± .01 ANGLES ± 5°<br/>.X ± .1 SURFACES = 125°</td> </tr> <tr> <td>HEAT</td> </tr> <tr> <td>TREAT</td> </tr> <tr> <td>FINISH</td> </tr> <tr> <td>SPEC</td> <td>1. BREAK ALL SHARP EDGES<br/>015 x 45° OR .015R</td> </tr> <tr> <td>DRAWN BY: DUERFELDT</td> <td>2. DIMENSIONAL LIMITS APPLY<br/>AFTER PLATING</td> </tr> <tr> <td>CHECKED: CLOUGH</td> <td>3. INTERPRET DIM AND TOL PER<br/>ASME Y14.5M-2009</td> </tr> <tr> <td>OPPS APPR: ANDERSON</td> <td>USED ON MODEL</td> </tr> <tr> <td>QA APPR: LINDSAY</td> <td>BELL 412</td> </tr> <tr> <td>APPROVED: GILBERT</td> <td></td> </tr> <tr> <td>SCALE 1:4</td> <td>DATE 9/21/2016 SHEET 1 OF 3</td> </tr> </table> |                                                                                                                                           | MAT'L | UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN INCHES<br>.XXX ± .005 FRACTIONS ± 1/8<br>.XX ± .01 ANGLES ± 5°<br>.X ± .1 SURFACES = 125° | HEAT | TREAT | FINISH | SPEC | 1. BREAK ALL SHARP EDGES<br>015 x 45° OR .015R | DRAWN BY: DUERFELDT | 2. DIMENSIONAL LIMITS APPLY<br>AFTER PLATING | CHECKED: CLOUGH | 3. INTERPRET DIM AND TOL PER<br>ASME Y14.5M-2009 | OPPS APPR: ANDERSON | USED ON MODEL | QA APPR: LINDSAY | BELL 412 | APPROVED: GILBERT |  | SCALE 1:4 | DATE 9/21/2016 SHEET 1 OF 3 |
| MAT'L                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | UNLESS OTHERWISE SPECIFIED<br>DIMENSIONS ARE IN INCHES<br>.XXX ± .005 FRACTIONS ± 1/8<br>.XX ± .01 ANGLES ± 5°<br>.X ± .1 SURFACES = 125° |       |                                                                                                                                           |      |       |        |      |                                                |                     |                                              |                 |                                                  |                     |               |                  |          |                   |  |           |                             |
| HEAT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                           |       |                                                                                                                                           |      |       |        |      |                                                |                     |                                              |                 |                                                  |                     |               |                  |          |                   |  |           |                             |
| TREAT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                           |       |                                                                                                                                           |      |       |        |      |                                                |                     |                                              |                 |                                                  |                     |               |                  |          |                   |  |           |                             |
| FINISH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                           |       |                                                                                                                                           |      |       |        |      |                                                |                     |                                              |                 |                                                  |                     |               |                  |          |                   |  |           |                             |
| SPEC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1. BREAK ALL SHARP EDGES<br>015 x 45° OR .015R                                                                                            |       |                                                                                                                                           |      |       |        |      |                                                |                     |                                              |                 |                                                  |                     |               |                  |          |                   |  |           |                             |
| DRAWN BY: DUERFELDT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2. DIMENSIONAL LIMITS APPLY<br>AFTER PLATING                                                                                              |       |                                                                                                                                           |      |       |        |      |                                                |                     |                                              |                 |                                                  |                     |               |                  |          |                   |  |           |                             |
| CHECKED: CLOUGH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 3. INTERPRET DIM AND TOL PER<br>ASME Y14.5M-2009                                                                                          |       |                                                                                                                                           |      |       |        |      |                                                |                     |                                              |                 |                                                  |                     |               |                  |          |                   |  |           |                             |
| OPPS APPR: ANDERSON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | USED ON MODEL                                                                                                                             |       |                                                                                                                                           |      |       |        |      |                                                |                     |                                              |                 |                                                  |                     |               |                  |          |                   |  |           |                             |
| QA APPR: LINDSAY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | BELL 412                                                                                                                                  |       |                                                                                                                                           |      |       |        |      |                                                |                     |                                              |                 |                                                  |                     |               |                  |          |                   |  |           |                             |
| APPROVED: GILBERT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                           |       |                                                                                                                                           |      |       |        |      |                                                |                     |                                              |                 |                                                  |                     |               |                  |          |                   |  |           |                             |
| SCALE 1:4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | DATE 9/21/2016 SHEET 1 OF 3                                                                                                               |       |                                                                                                                                           |      |       |        |      |                                                |                     |                                              |                 |                                                  |                     |               |                  |          |                   |  |           |                             |

| ASSY QTY | ASSY QTY | B/O | Part #                   | UNIT QTY | Description  | Material            | B/O INFORMATION OR SPECIFICATIONS    | PG. |
|----------|----------|-----|--------------------------|----------|--------------|---------------------|--------------------------------------|-----|
|          |          |     | RB412WA-CR&O-3-62-2A-1-2 | 1        | WORK AID     |                     |                                      | 1   |
|          |          | B/O | -1                       | 1        | BOTTOM FOAM  | ETHAFOAM 220, BLACK | 2.05 X 6.13 X 10.63 (CASE SOLUTIONS) | 2   |
|          |          | B/O | -3                       | 1        | TOP FOAM     | ETHAFOAM 220, BLACK | 1.05 X 6.13 X 10.63 (CASE SOLUTIONS) | 3   |
|          |          | B/O | -5                       | 1        | CASE         | PLASTIC             | PELICAN #APP-1170-E                  | N/S |
|          |          | B/O |                          | 1        | DART PLACARD | ALUMINUM            | RB41011                              | N/S |



DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                                                 |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                                                 |  |
| Date :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Step #:                                                                                                                                                                            | QTY Effective :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | MRB (QSI042) Approval                           |  |
| Description Work Order Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                    | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                 |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | Completed By                                    |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | Lead hand / Supervisor<br>Approval Verification |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | QC / QA Coordinator<br>Approval                 |  |
| <b>Root Cause</b><br><div style="display: flex; justify-content: space-between;"> <div>           Environment <input type="checkbox"/><br/>           Design <input type="checkbox"/><br/>           Doc/Data <input type="checkbox"/><br/>           Equip/Tooling <input type="checkbox"/><br/>           Handling/Pre <input type="checkbox"/><br/>           Material <input type="checkbox"/><br/>           Internal Transport <input type="checkbox"/><br/>           Tribal Knowledge <input type="checkbox"/><br/>           LOA <input type="checkbox"/><br/>           Substation <input type="checkbox"/><br/>           Past Expiry Date <input type="checkbox"/><br/>           Misidentified <input type="checkbox"/> </div> <div>           No Re-verification <input type="checkbox"/><br/>           Operator <input type="checkbox"/><br/>           Offset/Setup <input type="checkbox"/><br/>           Supplier <input type="checkbox"/><br/>           Training <input type="checkbox"/><br/>           Use for Testing <input type="checkbox"/><br/>           Poor Information <input type="checkbox"/><br/>           Rushing <input type="checkbox"/><br/>           Product Improvement <input type="checkbox"/><br/>           Process Improvement <input type="checkbox"/><br/>           Manufacturing Process <input type="checkbox"/><br/>           Past Due <input type="checkbox"/> </div> </div> |                                                                                                                                                                                    | <b>FAULT CATEGORY</b><br><div style="display: flex; justify-content: space-between;"> <div>           Pressure/Forced <input type="checkbox"/><br/>           Bending <input type="checkbox"/><br/>           Centre Not Concentric <input type="checkbox"/><br/>           Cracks <input type="checkbox"/><br/>           Crimp/Kink/Ripple/Wave <input type="checkbox"/><br/>           Cuffs <input type="checkbox"/><br/>           Crushing <input type="checkbox"/><br/>           Heat Treat <input type="checkbox"/><br/>           Wave/Twist in Tube <input type="checkbox"/><br/>           Marks/Chatter <input type="checkbox"/> </div> <div>           Temperature/Cure <input type="checkbox"/><br/>           Set-up <input type="checkbox"/><br/>           BOM/Route <input type="checkbox"/><br/>           Broken/Damage/Defect <input type="checkbox"/><br/>           Inspection Incomplete/Unqualified <input type="checkbox"/><br/>           Contamination <input type="checkbox"/><br/>           Countersink <input type="checkbox"/><br/>           Cut Too Short <input type="checkbox"/><br/>           Instructions Incomplete/Unclear <input type="checkbox"/><br/>           Drill Holes <input type="checkbox"/> </div> <div>           Power Loss/Surge <input type="checkbox"/><br/>           Folio/Program <input type="checkbox"/><br/>           Grain <input type="checkbox"/><br/>           Weld <input type="checkbox"/><br/>           Wrong Stock Pulled <input type="checkbox"/><br/>           Out of Sequence <input type="checkbox"/><br/>           Off-set <input type="checkbox"/><br/>           Misabeled <input type="checkbox"/><br/>           Fit/Function <input type="checkbox"/><br/>           Misaligned/off center <input type="checkbox"/> </div> <div>           Positioned Wrong <input type="checkbox"/><br/>           Outside Dimensions <input type="checkbox"/><br/>           Over/Under tolerance <input type="checkbox"/><br/>           Part Incorrect <input type="checkbox"/><br/>           Part Lost/Missing <input type="checkbox"/><br/>           Part Moved <input type="checkbox"/><br/>           Drawing <input type="checkbox"/><br/>           Finish <input type="checkbox"/><br/>           Misread <input type="checkbox"/><br/>           Turning Sequence <input type="checkbox"/> </div> </div> |  |                                                 |  |
| OTHER : <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                                                 |  |